Black-winged Petrel on Mutton Bird Island New South Wales

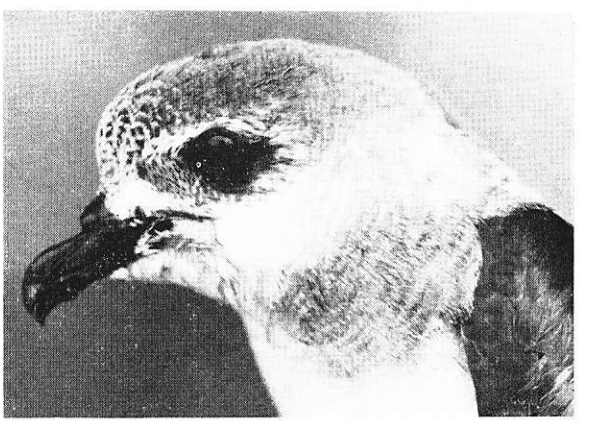
GLENN HOLMES

Until recently the Black-winged Petrel *Pterodroma nigripennis* was known to breed only at the Kermadec and Three Kings Islands (Oliver 1955). However, during the last decade the species has expanded its breeding distribution to include Norfolk, Lord Howe and the Chatham Islands and it has been observed on Heron and Lady Musgrave Islands in southern Queensland (P. Fullagar, pers. comm.). It has also been observed at sea near the Austral Islands (King 1967).

The three known records in New South Wales of beach-washed birds are consistent with this expansion; at Cronulla in February 1964 (Hindwood 1965), Newcastle in April 1968 (Holmes, pers. obs.) and Durras in March 1973 (Morris 1974). Elsewhere in Australia, one was found beach-washed at Stradbroke Island, Queensland, in January 1974 (G. Ingram, in litt.), and one was found dead in forest 40 km from the sea near Melbourne, Victoria, in April 1974 (Smith, 1975). From at least 11 January to 12 March 1975 up to six Black-winged Petrels frequented Mutton Bird Island, Coffs Harbour.

On 11 January I was on the island with Robert Beeton when at about 20:00 I heard a persistent call similar to that of the Sacred Kingfisher *Halcyon sancta,* but consisting of three to seven notes. About four small petrels were later found by torchlight. They were flying low overhead at the eastern end of the island, but Robert had a powerful torch with which he dazzled one bird that was captured and subsequently banded. During the next two months I visited the island frequently. The results of this study are summarised in Table 1.

The Black-winged Petrels were often present by the time I visited the island. They probably arrived on most nights with the Wedge-tailed Shearwaters *Puffinus pacificus* at about 19:30-19:40 (Eastern Standard Time). The only observed arrivals were on 22 January, when the three arrived separately at 20:50, 21:20 and 21:40, on 1 February at 21:20 and on 8 February at 19:40. Their absence on 23 and 25 January coincided with strong moonlight, but they were present on 28 January when the full moon was obscured by overcast. I visited the island nine times during daylight in January and February but none was observed. This contrasts with the situation on many oceanic islands, such as the Kermadecs, where they visit land throughout the day and night in the breeding season. There they are most abundant flying overhead in January during incubation, so they are probably 'unemployed' (Merton 1970).



● *Black-winged Petrel.*

Photo: P. E. Roberts.

Throughout January the birds flew around overhead calling loudly, usually at the easternmost end of the island. Frequently two birds flew close together in what appeared to be court-

TABLE 1

The numbers present and banding data of Black-winged Petrels on Mutton Bird Island, January to March 1975.

Date	Observation Interval*	Number Present	Banded	Recaptured
11.1.75	19:30-20:30	3-4	050-49593	
12.1.75	19:30-20:30	2+		
13.1.75	20:45-21:45	1?		
17.1.75	20:45-22:00	2		050-49593
19.1.75	20:15-21:00	3		
22.1.75	20:00-22:00	3		
23.1.75	23:00-23:25	0		
25.1.75	20:50-21:15	0		
28.1.75	20:00-22:00	3	050-49594	050-49593
1.2.75	20:00-22:00	3	050-49595	
8.2.75	19:30-23:00	3-4	050-49596	050-49593
10.2.75	20:10-21:20	3	050-49597	050-49596
18.2.75	20:25-21:00	3		050-49593, 050-49595
12.3.75	21:15-21:50	2	050-49598	
17.3.75	20:40-21:00	0		
29.3.75	19:00-20:30	0		

* Eastern Standard Time

ship behaviour, meanwhile uttering guttural buzzes, whines and trumpetings that were scarcely audible. From late January onwards they began to settle on the ground more often. Their settling places were indicated by the localisation of their calling, when it was possible to simply walk up to a bird quietly and capture it by hand. The coincident increase in the ease of their capture is obvious in Table 1.

Freshly dug burrows were found at the eastern end of the island on —

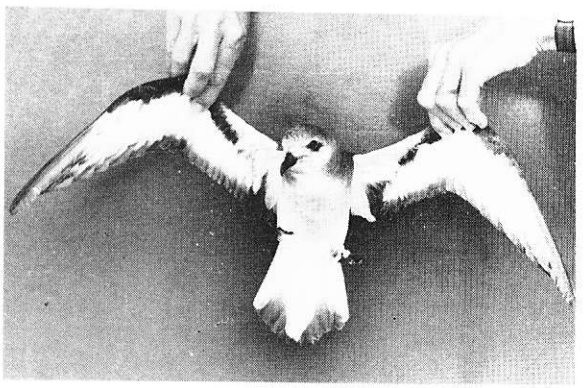
(a) 10 February: 30 cm long, under vine on edge of steep slope; 050-49596 in burrow, 050-49597 on surface directly above.

(b) 18 February: 10 cm long, in short grass about 30 m south-east of (a); 050-49593 at this burrow, probably paired to 050-49594 with which it was captured on 28 January.

(c) 12 March: 40 cm long, under short grass 4 m south-east of (a); 050-49598 near this burrow with fresh soil on bill and underparts, probably paired to 050-49595.

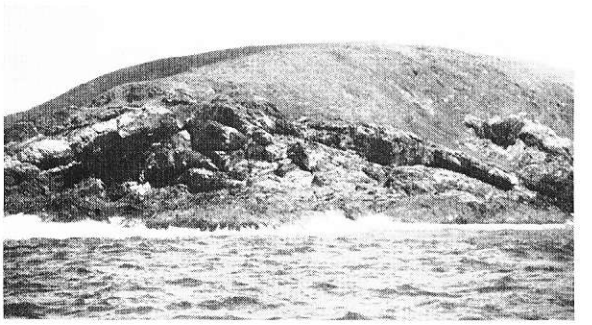
The burrows were on the edge of the shearwater colony, an association that prevails at many of their breeding islands. From 22 January to 18 February I often saw them chasing any shearwaters that flew into the area of their burrows. I observed similar aggression in the Providence Petrel *Pterodroma solandri* toward the Masked Booby *Sula dactylatra* on Lord Howe Island on 15 April 1975. One booby that flew past the Goat House on Mount Lidgbird was simply followed by two petrels for a short distance, but another that was chased by one petrel had to take avoiding action.

The development of a brood patch was first observed on 050-49593. When it was captured on 11 January there were two small bare patches on each side of the abdomen. This was unchanged on 17 January, but on 28 January it had developed an uninterrupted bare area. A similar development occurred on 050-49595 between 1 and 18 February. Three others had complete brood patches when first captured; 050-49597 was not examined. The brood patches in all of these birds, however, did not seem sufficiently vascularised to be functional. Bartle (1968) found that in the Pycroft Petrel *Pterodroma pycrofti* 'unemployed' birds developed



● *Black-winged Petrel showing under-wing pattern.*

Photo: P. E. Roberts.



● *The eastern end of the island where the petrels were captured.*

Photo: N. G. Holmes.

brood patches one to two weeks later than breeding birds. This agrees with the above observation in *P. nigripennis*, which lays in late December-early January (Merton 1970).

On 13 April 1975 I visited the small colony of Black-winged Petrels on North Head, Lord Howe Island. The burrows were about 60-150 cm long. The seven chicks found weighed 210-290 g (mean 232 g) and the longest primaries were only 5 cm (mean 3.2 cm). Fledged birds weigh about 160 g. At this colony on 23 February 1974 P. Fullagar and J. Disney found young at stages from hatching to pin-feathered (Rogers, 1975). Oliver (1955) stated that at the Kermadec Islands the young leave at the end of April, but the development of the Lord Howe Island nestlings indicates a protracted departure, at least for this island, occurring throughout May.

The vegetation at North Head is largely of low shrubs 1-2 m high. On Mutton Bird Island the vegetation might be too open to permit successful breeding in ensuing seasons, as it is dominated by herbs such as *Commelina cyanea*. However, the two longer burrows were less than 5 m from a large patch of the introduced grass *Cenchris australis* which is often over 1 m high and now covers extensive areas on the island.

This apparent attempt at colonising Mutton Bird Island suggests that petrel colonies are begun by subadults, 'prospecting' at perhaps three to four years of age. The development of a brood patch in these subadults is not widely appreciated. The physiological changes associated with it and behaviour such as the preparation of burrows are undoubtedly prerequisites for future breeding. Whether this occurs at a particular mean age or is influenced directly when near maturity by the availability of resources such as food is not known. The answer to this must add substantially to the study of population dynamics in petrels and to population theory generally.

References

Bartle, J. A. (1968). 'Observations on the Breeding Habits of Pycroft's Petrel', *Notornis* 15: 70-99.

Hindwood, K. A. (1965). 'The Black-winged Petrel: an Australian Specimen Record', *Emu* 64: 104.

King, W. B. (1967). Seabirds of the Tropical Pacific Ocean. Smithsonian Institution, Washington, D.C.

Merton, D. V. (1970). 'Kermadec Islands Expedition Reports: a General Account of Birdlife', *Notornis* 17: 147-199.

Morris, A. K. (1974). 'Seabirds Found Dead in New South Wales in 1973', *Aust. Birds* 9: 1-11.

Oliver, W. R. B. (1955). New Zealand Birds (2nd Edition). Reed, Wellington, N.Z.

Rogers, A. E. F. (1975). 'N.S.W. Bird Report for 1974', *Aust. Birds* 9: 77-97.

Smith, F. T. H. (1975). 'A Victorian Record of the Black-winged Petrel, *Pterodroma nigripennis*', *Aust. Bird Watcher* 6: 40.

N. G. Holmes,
P.O. Box 795,
Coffs Harbour. N.S.W.